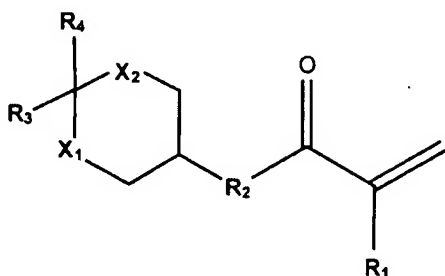


WHAT IS CLAIMED IS:

1. A monomer corresponding to a compound of formula (I):



(I)

5 wherein

R₁ is CH₃ or H,

R₂ is (R_{2a})_mW_n(R_{2b})_pY_qZ, wherein

R_{2a} and R_{2b} are independently selected from carbonates, carbamates, ureas, dithiocarbonates, dithiocarbamates, thiocarbonates, thioureas, trithiocarbonates, and thiocarbamates,

m and p are independently selected from 0 and 1,

W is selected from CH₂ and (CH₂)_tO,

Y is selected from CH₂ and (CH₂)_sO,

t and s are integers independently selected from 0 to 50 inclusive,

n and q are integers independently selected from 0 to 50 inclusive,

Z is O or NH and is attached to the carbonyl moiety,

R₃ and R₄ are independently selected from H, a substituted or unsubstituted alkyl group, and a substituted or unsubstituted aromatic group, and

X₁ and X₂ are independently selected from O and S;

20 wherein

(a) if Z is O, Y is CH₂, q is an integer from 1 to 4 inclusive, and m, n, and p are 0, then at least one of X₁ and X₂ is S;

(b) if Z is O, W is CH₂, n is an integer from 1 to 4 inclusive, and m, p, and q are 0, then at least one of X₁ and X₂ is S; and,

(c) if Z is O and m, n, p, and q are 0, then at least one of X₁ and X₂ is S.

2. The monomer of claim 1, wherein the alkyl group or the aromatic group of R₃ or R₄ comprises at least one ring having 3, 4, 5, 6, 7, 8, or more members.

3. The monomer of claim 1, wherein the monomer is selected from
5 Table I.

4. A polymerizable composition comprising at least two monomers, wherein at least one of the monomers corresponds to the compound of formula (I) of claim 1.

5. The polymerizable composition of claim 4, further comprising at
10 least one initiator.

6. A polymer comprising at least one monomeric unit derived from the compound of formula (I) of claim 1.

7. An article comprising the polymer of claim 6.

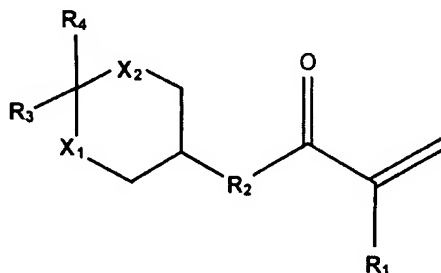
8. The article of claim 7, wherein the article comprises at least one
15 coating that comprises the polymer.

9. The article of claim 7, wherein the article is selected from the group consisting of: a dental restorative material, a lithographic material, a membrane, an adhesive, a printing plate, an ink, a holographic material, and a biomaterial.

20

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10. A method of producing a polymer, the method comprising reacting at least two monomers with one another, wherein at least one of the monomers corresponds to a compound of formula (I):



(I)

5 wherein

R_1 is CH_3 or H,

R_2 is $(R_{2a})_m W_n (R_{2b})_p Y_q Z$, wherein

R_{2a} and R_{2b} are independently selected from carbonates, carbamates, ureas, dithiocarbonates, dithiocarbamates, thiocarbonates, thioureas, trithiocarbonates, and thiocarbamates,

10

m and p are independently selected from 0 and 1,

W is selected from CH_2 and $(\text{CH}_2)_t \text{O}$,

Y is selected from CH_2 and $(\text{CH}_2)_s \text{O}$,

t and s are integers independently selected from 0 to 50 inclusive,

15

n and q are integers independently selected from 0 to 50 inclusive,

Z is O or NH and is attached to the carbonyl moiety,

R_3 and R_4 are independently selected from H, a substituted or unsubstituted alkyl group, and a substituted or unsubstituted aromatic group, and

X_1 and X_2 are independently selected from O and S;

20

wherein

(a) if Z is O, Y is CH_2 , q is an integer from 1 to 4 inclusive, and m , n , and p are 0, then at least one of X_1 and X_2 is S;

(b) if Z is O, W is CH_2 , n is an integer from 1 to 4 inclusive, and m , p , and q are 0, then at least one of X_1 and X_2 is S; and,

(c) if Z is O and m, n, p, and q are 0, then at least one of X_1 and X_2 is S.

11. The method of claim 10, wherein the reacting step comprises one or more of: irradiating a composition comprising the monomers, heating a composition comprising the monomers, or adding at least one catalyst to a composition comprising the monomers.

12. The method of claim 10, wherein the monomers react with one another to substantially quantitative double bond conversion.

13. The method of claim 10, wherein a composition comprises the monomers, which composition further comprises at least one initiator.

10 14. The polymer produced by the method of claim 10.

15. The method of claim 10, wherein at least one of the monomers is selected from Table I.